

EMSC Connects

Volume 5, Issue 6

June 2016

Emergency Medical Services for Children Utah Bureau of EMS and Preparedness

Special points of interest:

- Detergent Packet Dangers
- Car Surfing and Longboarding
- Closed Head Injury Protocol

Inside this issue:

Pedi Points	2
The Doc Spot	2
Protocols in Practice	5
Happenings	6
News From National	6
Calendar	7
Save the Date	8

A Word From Our Program Manager

The cool weather has changed to hot.... like a typical Utah spring/summer. I don't know if anyone else does this anymore, but it is spring cleaning time for me when I wash the winter bedding, clothes, rugs and accessories and put them away for the summer. I go through a lot of laundry detergent this time of year.

The work reminded me about a recent study I read regarding "Pediatric Exposures to Laundry and Dishwasher Detergents in the United States: 2013-2014." This study is published in the Pediatrics journal, online. From January 2013 to December of 2014, 62,254 calls related to dishwasher or laundry detergent exposures were made to Poison Control Centers throughout the U.S. There was a seventeen percent increase in incidents related to laundry detergent packets. The Poison Control Centers receive on average, 30 calls a day or one call per every 45 minutes related to laundry detergent exposure. About 86% of detergent exposures were children younger than 3 years old. About half of the calls resulted in children being referred to medical facilities for assessment and treatment.

So what can happen to a child that may have ingested the detergent? The medical results can be drowsiness, eye pain and irritation, vomiting, choking, breathing and heart problems, coma and death.

As healthcare providers in your

communities and when the opportunities arise, please share the following information with adults, especially those having children around

who are under the age of 6:

- Use traditional detergent rather than packets
- Store the detergent out of sight and in a locked cabinet
- Close the containers and put them away immediately after

each use

- Save the Poison Help Line number (1-800-222-1222) on your cell phone

If you want more information, go to Nationwide Children's Hospital website or the www.injurycenter.org.

As always, thank you for the care you provide to the children of Utah and your efforts to educate and share information to prevent injury and illness. Be safe.

Jolene Whitney

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Pedi Points

Tia Dalrymple RN, BSN

School is out and summer is here. EMS responders can expect to see an increase in pediatric trauma as children head outdoors. There are a few relatively unknown risky activities out there, car-surfing and longboarding. While it is difficult to nail down the exact number of victims, we do know that the numbers are rising. Incidents of car surfing could increase over the next few months: Teens have more driving freedom when school lets out, and summer is traditionally the most dangerous season for young drivers. This is also the season that longboarders dust off their 60 inch boards and head out with dreams of setting a new speed record.

Parents have substantial influence over what their children do, but many parents might be unaware that car surfing or longboarding is even one of the dangers awaiting their children. EMS responders need to know the types of injuries to expect and how they can promote injury prevention.

Let's all work towards a safe, fun summer !



"This was an eye-opener for a lot of people who didn't know it was going on or had never heard of car surfing...As with any dangerous practice, we would encourage parents to talk to their children, to be very conscious of their activities, particularly young teens getting behind the wheel. Law enforcement can only do so much."

Volusia County Sheriff Gary Davidson

The Doc Spot

Adapted from *Surfing the Turf and Other Risky Business Zero Fatalities Safety Summit 2016*

Hilary Hewes, MD and Julia Rawlings, MD

Definition

Car surfing: Riding on the outside of a moving vehicle (roof, side rails, hood, trunk)

Background

- First introduced in mid 1980s, gained popular attention in the media. One memorable example is 1985's Teen Wolf.
- Originally tied to the "hyphy" culture (Oakland slang for hyperactive) involving loud music, energetic dancing, and illegal car maneuvers
- Increased popularity in recent media; Grand Theft Auto, youtube, and the Spiderman movies



The Problem

Head Injury! 67 of 89 reported cases of car surfing in national literature had head injury (75%). Primary Children's Trauma database from 2006-2016 showed that 32 of 32 kids had head trauma (100%). This is an alarming rate of head injury compared to other mechanisms of trauma (car accidents = 24.3% and bicycle accidents = 29.1%)¹. In these car surfing cases head injury was cited as the cause of all mortalities.

Injury Prevention

- We need a better understanding of how many teens are participating

The Doc Spot– continued

- Include education about car surfing in driver's school
- Although helmets may help decrease severity of injury, it would endorse the activity as acceptable
- Legal action for those participating in car surfing, including driver
Decrease car surfing exposure in media



Definition

Longboarding: is the act of riding on a Longboard. Longboarding also has competitive races down hill, with some riders reaching speeds exceeding 50 miles per hour. Longboards are generally 42 to even 80 inches in length, compared with regular skateboards that are 30 to 38 inches long. The longer length and increased width of the longboard allow for greater travel, higher speeds, downhill cruising, and carving.

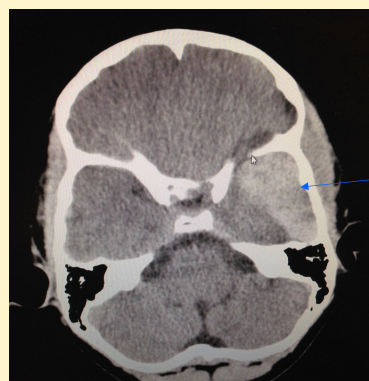
Case Study

13 year old male riding longboard down a steep hill when he lost control. He tried to jump off, but fell landing on his head

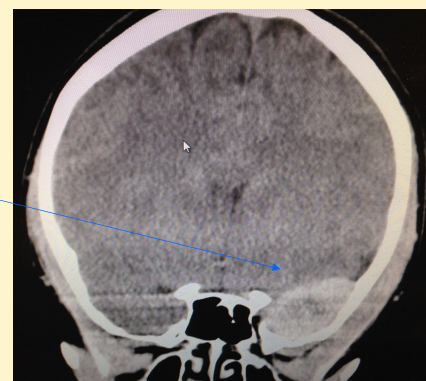
- Wearing a helmet that cracked
- Positive loss of consciousness on scene with impact seizure
- When he awoke, EMS gave a Glasgow Coma Scale (GCS) of 15
- GCS 14 on arrival to Primary Children's
- Noted to have a left-sided scalp hematoma and swelling

Findings

CT scan of head showed a large epidural hematoma at floor of left middle cranial fossa with overlying non-depressed linear skull fracture



Epidural Hematoma



Background

- Started as a discrete subset of skateboarding culture
- Longer, broader skate board, often ridden on open roads at high speeds
- Speeds up to 30 mph racing downhill (The current world record for the fastest speed measured at >80 mph, set on June 18, 2012)

The Doc Spot–Continued

- Open roads introduce more hazards in the form of cars, lamp posts, trees, pot-holes, and other environmental obstacles. More than a skate park affords.
- Previous studies show that <10% wear a helmet

A study reported out of Utah Valley and presented at American Public Health Association annual meeting indicated that of 800 Utah riders from 2006-2011...

- Average age 19 years of age, 75% male
- Severe skull fractures, traumatic brain injury, intracranial hemorrhage more common among longboarders vs skateboarders ($p < 0.0001$)
- Over one-third of injuries resulted in traumatic brain injury
- All patients with an Injury Severity Score >15 were longboarders
- Longboarders were significantly more likely to undergo surgery overall and neurosurgery in particular
- Hospital and ICU stay statistically more significant with longboarders
- Head impact was documented in 309 (37.9%) of all patients
- Longboarders were significantly more likely to have a head impact than skateboarders (49.0% versus 21.7%, $p < 0.0001$)
- Need to have higher-than-normal index of suspicion with lower threshold for neuroimaging
- Need to promote helmet-use public health campaigns

Injury Prevention

- Campaigns promoting helmet use may significantly reduce TBI and skull fractures if customized to the longboarding population. Some ideas include; helmet use by longboarding professionals, promotion of helmet use by local longboarding shops, discounted or free distribution of helmets to longboarders, **health care professionals prioritize education of helmet use in the skateboarding and longboarding population.**



Summary

Car surfing is a high risk activity, specifically associated with head trauma. The number of children participating in car surfing seems to be increasing and younger children are also participating. We need increased media attention on the dangers of car surfing and awareness of how the activity is portrayed in the media. There is a need for increased community education and awareness of the dangers of car surfing, including addressing the issue during driver's education.

Teens who longboard are at higher risk of serious injury such as head injury and are less likely to wear helmets than skateboarders. The severity of longboard injuries are due in part to riding at higher speeds on the open road with more risk of hitting obstacles. There is a need for injury prevention strategies to promote helmet use, safe riding speeds, and road awareness among longboarders.

1. J Neurosurg Pediatr. 2009;4(5):408-413
2. Other References on request

Protocols in Practice

Closed Head Injury

Definition: Closed Head Injury refers to any infant or child with non-penetrating traumatic brain injury (TBI). “Mild closed head injury” applies to children with GCS 3-15 after TBI. “Moderate to severe closed head injury” applies to children with a GCS \leq 12 after TBI.

Clinical Presentation: Children with closed TBI may be confused, combative, or unresponsive. They may have associated skull fracture or other traumatic injuries (c-spine, chest, abdominal, extremities). TBI victims may develop hypoxia or poor oxygen saturation, hypotension, alterations in respiratory drive, and unequal or unresponsive pupils.

BLS	ALS
1. Perform a general peds assessment.	1. Place on cardiac monitor, treat any arrhythmias
2. Maintain C-spine precautions at all times.	2. Continue to maintain airway, consider intubation if BVM is ineffective.
3. Place on pulse oximeter. Administer supplemental oxygen. Maintain airway, if needed begin BVM ventilation.	3. Initiate IV or IO access if GCS \leq 12 or concern for poor perfusion or hypotension.
4. Check pupils. If one of both are “blown” and patient is unresponsive, begin BVM to augment respiratory efforts. Reassess every 5 minutes.	4. Check blood pressure every 5-10 minutes. Initiate NS or LR 20ml/kg for hypotension or if unable to obtain blood pressure. May repeat to a total of 60ml/kg if the patient shows no improvement
6. Assess for other traumatic injuries. Apply pressure to any obvious bleeding.	5. Continue to check pupils every 5 minutes and adjust respiratory rate as suggested in the protocols
7. If the child exhibits seizure activity, assure sufficient space to prevent contact injury. Support airway with jaw thrust.	6. For any seizure lasting longer than 5 minutes or reoccurring, treat with medications and contact medical control as soon as possible.
8. Transport for medical evaluation.	



“Traumatic Brain Injury (TBI) is a leading cause of childhood death”

Key Considerations

- Traumatic Brain Injury (TBI) is a leading cause of childhood death. Hypotension, hypoxia, and either excessive or inadequate ventilation early after TBI are associated with worse outcomes.
- A blown pupil is concerning for life-threatening increased intracranial pressure. If present, MILD hyperventilation may be life saving. Aggressive hyperventilation is associated with worse outcomes. Refer to the mild hyperventilation chart.
- Also remember that a TBI can be painful but evaluation is based on serial neurological exams and pain medication can cloud that assessment.



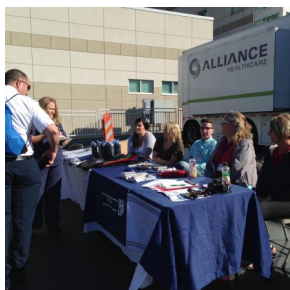
Downhill Daredevils

Happenings

EMS Week 2016

Primary Children's Hospital hosted an EMS appreciation breakfast for EMS responders on EMSC day during EMS week! -how about all those EMSs

The blueberry pancakes and buttermilk syrup hit the spot. Tee-shirts, flashlights, and water bottles aplenty. Thanks so much Primary Children's for letting us be a part of your celebration and thanks to Utah's EMS agencies and first responders. One week is not enough to express out gratitude!!!



News from National

New ACP Pediatric-to-Adult Transition Tools Released

The American College of Physicians (ACP) - as part of the [Pediatric to Adult Care Transitions Initiative](#) - has released [specialized toolkits](#) to facilitate more effective transition and transfer of young adults into health care settings. Each toolkit contains disease-specific information and resources that are critical for the young adult in transition to be aware of and understand in order to successfully achieve optimal self-care as an emerging adult. Condition-specific toolkits are currently available for general internal medicine, cardiology, endocrinology, hematology, nephrology, and rheumatology. Gastroenterology will join the line up soon.

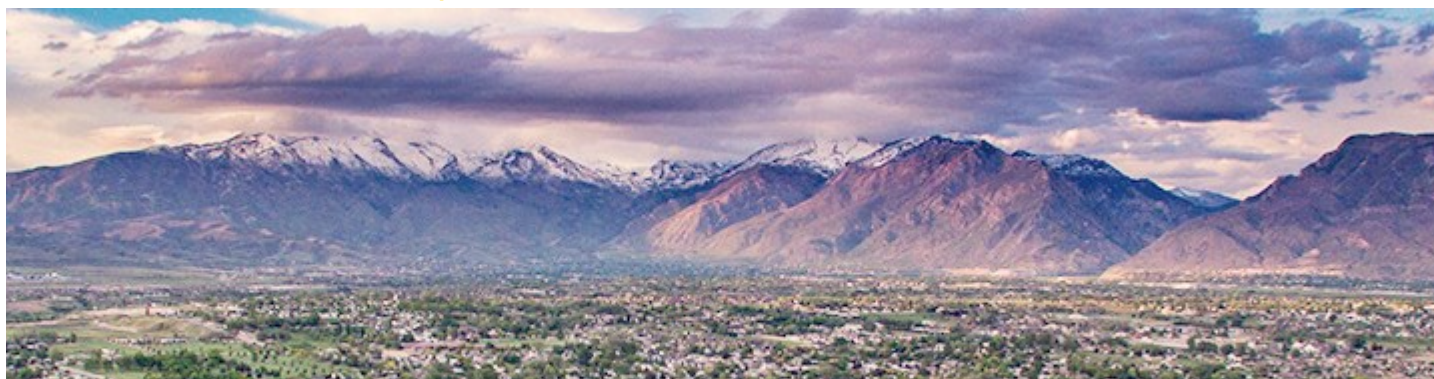
FEMA Launches New Children and Disasters Website

The Federal Emergency Management Agency (FEMA) recently launched a Children and Disasters [webpage](#). It hosts various resources to help state, local, and tribal governments, as well as stakeholders responsible for the temporary care of children, integrate children's disaster-related needs into preparedness, planning, response, and recovery efforts.

*Thanks so much
Primary
Children's for
letting us be a
part of your
celebration and
thanks to Utah's
EMS agencies and
first responders*

EMSC Coordinators We Will See You Soon!!!

Annual Coordinators Workshop, Lehi Utah June 16-18th



June 2016

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11 PEPP Spanish Fork
12	13	14	15	16 EMSC TGR	17 COORDINATORS	18 RETREAT
19	20	21	22	23 PEPP Montezuma Creek	24 HAFB Strike Team →	25
26	27	28	29	30		

Pediatric Education Around the State

Pediatric Grand Rounds (PGR) are educational/CME offerings webcast weekly (Sept-May) you can watch live or archived presentations. It is geared towards hospital personnel. But will certify as BEMSP CME. While they are on break for the trauma season, prchive presentations can be accessed at <https://intermountainhealthcare.org/locations/primary-childrens-hospital/for-referring-physicians/pediatric-grand-rounds/>

Trauma Grand Rounds (TGR) This free offering alternates with EMS Grand Rounds every other month, it is geared towards hospital personnel.

June 16 Spinal Trauma—Ryan Spiker MD

There are 3 ways to participate

- Attend in person 0700-0800 Classroom A SOM University Hospital.
- Attend live via the internet at : <http://utn.org/live/trauma/> To receive CME for viewing via live stream, please send an email with your name and the presentation you viewed to zachery.robinson@hsc.utah.edu. A CME certificate will be emailed to you within two weeks.
- View the archived presentation two weeks after the live date

at www.healthcare.utah.edu/trauma

Upcoming Peds Classes, 2016

For PEPP and PALS classes throughout the state contact Andy Ostler Aostler@utah.gov

Initial PEPP classes

June 23-24 Initial PEPP in Montezuma Creek

Renewal PEPP classes

June 11th Renewal PEPP in Spanish Fork

For PALS and ENPC classes in Filmore, Delta and MVH contact Kris Shields at shields57@gmail.com

Save the Date

June 16-18, 2016 EMSC Coordinators Workshop

July 20-22, 2016 [Western Pediatric Trauma Conference](#) hosted in Aspen Colorado

October 6-7, 2016 [Issues in Pediatric Care Conference](#)



Emergency Medical Services for Children

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Follow us on the web
<http://health.utah.gov/ems/emsc/>
and on Twitter: EMSCUtah

The Emergency Medical Services for Children (EMSC) Program aims to ensure that emergency medical care for the ill and injured child or adolescent is well integrated into an emergency medical service system. We work to ensure that the system is backed by optimal resources and that the entire spectrum of emergency services (prevention, acute care, and rehabilitation) is provided to children and adolescents, no matter where they live, attend school or travel.

Issues in Pediatric Care | 2016

Designed for Registered Nurses and Other
Healthcare Providers Who Care for Children
Sponsored by Pediatric Education Services
Primary Children's Hospital

Join us at the two-day Issues In Pediatric Care Conference that provides an update of current or emerging pediatric healthcare issues ranging from in-patient to out-of-hospital care settings. The conference will focus on new and changing diagnosis and treatment technologies including the challenges and rewards of providing nursing care to pediatric patients and their families.

Find out more and register online:

primarychildrens.org/issues



October 6–7, 2016

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 **Intermountain
Primary Children's Hospital**
"The Child First and Always"